

MAX PLANCK INSTITUTE OF GEOANTHROPOLOGY PRESENTS THE

Big Historical Data Conference

A multidisciplinary hybrid event on the theory and practice of
Big Data for the study of past human-environmental systems.



PROGRAMME

<http://bhndc.earth>

Wednesday, November 22

8:45-9:00 **Welcome address**

9:00-10:30 **Session 1: Big Databases: How large-scale archives can boost archaeological research I**

Session organisers: Martina Farese, Giulia Formichella, and Noemi Mantile

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| 1-1 | Ricardo Fernandes | The Pandora Initiative: promoting fairer data collaboration |
| 1-2 | Martina Farese | From the Neolithic to the Middle Ages: a big data view of foodways in ancient Italy |
| 1-3 | Antonio Caruso | STARC OSTEOARCH: An open access resource for recording and sharing human osteoarchaeological data |
| 1-4 | Claire Ebert | Tracking human diet and migration using the Caribbean and Mesoamerica Biogeochemical Isotope Overview (CAMBIO) |
| 1-5 | Natalia Riabogina | Building archaeobotanical and archaeozoological database in the BIAD: structure, creation experience and comparative analysis perspectives |
| 1-6 | Victor Yan Kin Lee | Bridging human paleogenetics and archaeology: problems with existing practices and prospects for overcoming them |

10:30-11:00 **Coffee break**

11:00-12:30 **Session 1. Big Databases: How large-scale archives can boost archaeological research II**

Session organisers: Martina Farese, Giulia Formichella, and Noemi Mantile

1-7	Andrew Kandel	The ROAD Database as a Research Tool for Exploring Human Evolution
1-8	Felix Riede	Cultural evolutionary trends as revealed by a novel, expert-sourced dataset on lithic technology, toolkits, and artefact shapes for the Final Palaeolithic/earliest Mesolithic of Europe (15-11ka BP)
1-9	David Laguna-Palma	An open and interdisciplinary approach to modelling movement along the ancient Lybian Sea
1-10	Efthymia Nikita	MetaMobility Databases: Promoting Greco-Roman bioarchaeology
1-11	Antonio Campus	Big Archaeological (Legacy) Data. Collection, dissemination and reuse for large scale analysis
1-12	Maite I. Garcia-Collado	Exploring large-scale historical processes using IsolberMed: a new isotope database for bioarchaeological samples from Medieval Iberia
12:30-13:30	Lunch	
13:30-14:00	Session 1: Big Databases: How large-scale archives can boost archaeological research III <i>Session organisers: Martina Farese, Giulia Formichella, and Noemi Mantile</i>	
1-13	Sean Hixon	Presenting a compilation of isotopic data from Madagascar
1-14	Carlo Coccozza	The IsoMemo Initiative: Enhancing archaeological and historical research through isotope databases
14:00-15:00	Session 2. Big Zooarchaeological Data: Challenges and potentials for multi-scalar analysis across millenia I <i>Session organisers: Angela Trentacoste, Jesse Wolfhagen, and Sarah Witcher Kansa</i>	

2-1	Sarah Witcher Kansa	From small to big data in zooarchaeology
2-2	Kitty Emery	Crosswalking, linking, and verbatim interpretations: adventures in legacy zooarchaeological biodiversity open data publishing
2-3	Canan Çakırlar	Cross-disciplinary reuse potential of big zooarchaeology data: What do we need?
2-4	David Orton	Assessing approaches to chronological uncertainty in large-scale zooarchaeological data synthesis

15:00-15:30 **Coffee break**

15:30-16:30 **Session 2. Big Zooarchaeological Data: Challenges and potentials for multi-scalar analysis across millenia II**
Session organisers: Angela Trentacoste, Jesse Wolfhagen, and Sarah Witcher Kansa

2-5	Matthew Hill Jr.	Tracking long-term subsistence among the Native North American Great Plains hunters
2-6	Max Price	Wool they won't they: Combing the zooarchaeological evidence for wool production in Northern Mesopotamia c. 4500-1500 cal. BC
2-7	Anthony King	The RomAniDat network: a zooarchaeological Big Data initiative for the ancient Roman world
2-8	Roberto Ragno	Understanding variation in zooarchaeological NISP data: Bayesian betabinomial models for Italian contexts in the 1st millennium CE

Thursday, November 23

9:00-10:30 **Session 3: Environments of big cultural heritage data integration I**

Session organisers: Michael Fisher and Dovydas Jurkenas

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| 3-1 | Michael Fisher | Heritage-environment interaction: Theorising Big (Palaeo)Data integration across the nature-culture divide |
| 3-2 | Julian Richards | ARIADNE: aggregating archaeological datasets at an international scale |
| 3-3 | Pablo Barruezo-Vaquero | Transdisciplinary data integration into a computational ontology: some reflections from the DataARC Project on modelling human–non-human entanglements |
| 3-4 | Thomas Huet | "Shared heritage": management and integration of cultural heritage data across Arches-based platforms in the Global South |
| 3-5 | Jonas Gregorio de Souza | Mapping the archaeological Pre-Columbian heritage in South America |
| 3-6 | MAHSA and MAEASaM Teams | Modelling heritage information in two diverse regions: reflections on the integration of heterogeneous big data from the MAHSA and MAEASaM projects |

10:30-11:00 **Coffee break**

11:00-11:30 **Session 3. Environments of big cultural heritage data integration II**

Session organisers: Michael Fisher and Dovydas Jurkenas

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- 3-7 [Dovydas Jurkenas](#) Hordes of Data: Multilayered documentation and collection of archaeological heritage and environmental data across the Mongolian landscape
 - 3-8 [Ankhsanaa Ganbold](#) Creating the Mongolia cultural heritage database (immovable historical and cultural heritage)

11:30-12:30

Session 4. Archaeological time-series: The quest for robust ¹⁴C-dated proxies for the intensity of prehistoric activity

Session organisers: John Meadows and Peer Kröger

- 4-1 [Jan Kolar](#) Large radiocarbon datasets in relation to archaeological context and metadata
- 4-2 [Fiona Laviano](#) Building a database of dated Neanderthal fossil remains to estimate the spatiotemporal pattern of Neanderthal extirpation
- 4-3 [Jiyoung Park](#) Investigating long-term population dynamics in the Han River Basin using radiocarbon dating
- 4-4 [Thomas Huet](#) NeoNet, an app for radiocarbon modelling of the Late Mesolithic / Early Neolithic transition in South-Central and South-Western Europe

12:30-13:30

Lunch and group photo

13:30-14:30

Session 5: Data and people in interaction: Network analysis for everyone

Session organisers: Vera Klontza and Barbora Ruffini

- 5-1 [Tamás Czuppon](#) Hidden information or misuse? Data and network analysis on burial customs (6-9 c. AD)
- 5-2 [Freg J. Stokes](#) Mapping networks of capital and resistance in tropical South America

5-3 [Britt Davis](#) Neutron activation analysis and networks: Possibilities and constraints

5-4 [Christopher Carleton](#) 'Symbolic scaling' in ancient and contemporary cities

14:30-15:00 **Session 6. Leveraging Big Data, GIS, and machine learning in remote sensing I**

Session organisers: Manuel Peters and Amina Jambajantsan

6-1 [MAESaM Team](#) An experiment with automated detection of diverse archaeological features in an African context using deep-learning and free satellite multispectral imagery

6-2 [Ahmed Mahmoud](#) Automated change detection monitoring of archaeological sites using machine learning and Google Earth Engine

15:00-15:30 **Coffee break**

15:30-16:00 **Session 6. Leveraging Big Data, GIS, and machine learning in remote sensing II**

Session organisers: Manuel J. H. Peters and Amina Jambajantsan

6-3 [Manuel J. H. Peters](#) Multi-scale automated feature detection in the Argentinean Andes: A comparative analysis of satellite and UAV

6-4 [David Stott](#) Positive false positives: Searching for annular landforms in Northern Europe

16:00-17:45 **Session 7. AI for historical and archaeological Big Data analysis II**

Session organiser: Jochen Büttner

7-1 [Jakob Hauser](#) Enhancing the Seshat databank: A computationally readable mapping of historical facts to scholarly references

7-2 [Hassan El-Hajj](#) Prompt me a dataset: Large-scale ML dataset creation in the humanities

7-3 [Mathieu Aubry](#) Discovering and analyzing patterns in large historical image databases

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| 7-4 | Amina Jambajantsan | Leveraging satellite imagery and Deep Learning in Mongolian archaeology |
| 7-5 | Jianyin Roachell | Deep Learning and Bayesian analysis of historical time series data |
| 7-6 | Adam Izdebski | Applying Bayesian machine learning to causality modelling in historical social-ecological systems: case studies from early modern Greece and Poland |
| 7-7 | Raphael Schlattmann | Trajectories of change: Using text embeddings to track knowledge evolution |

18:00-19:00 **Dinner**

19:00-19:30 **Plenary**

Friday, November 24

9:00-10:30	Session 8: Insights from reusing large prehistoric and interdisciplinary databases <i>Session organisers: Christian Sommer, Angela Bruch, Nicholas Conrad, Christine Hertler, Miriam N. Haidle, Volker Hochschild, Zara Kanaeva, Andrew Kandel, and the ROCEEH Team</i>
8-1	Samantha Scott Reiter Columns and rows: publishing, preparing, harmonizing and preserving protocols, guidelines and resources from the Big Interdisciplinary Archaeological Database
8-2	Anaïs Vignoles Shortcomings related to archaeological bibliographic databases used for macro-scale modeling: the SIGMENT database for estimating Middle and Recent Gravettian lithic technical tradition distributions in Western Europe
8-3	Giulia Marciani Beyond labels. Exploring patterns of formal description of lithic variability in Late Pleistocene technologies
8-4	Rimtautas Dapschauskas Using big data to gain new insights about large-scale developments of human behavioral evolution: ROAD and Middle Stone Age ochre use
8-5	Christian Sommer Mapping archaeological cultures and periods with network cartography
8-6	Jesús Rodríguez Modelling the adaptations of hominins to climate in Europe from MIS14 to MIS11
10:30-11:00	Coffee break
11:00-12:30	Session 9. Palaeoclimatic and palaeoenvironmental databases: Exploring the dynamics of human-environmental systems <i>Session organiser: Achim Brauer</i>

9-1	Pedro Andrade	Long-term arsenic exposure evidence in northern Chile revealed through analysis of compiled osteological and elemental data
9-2	Michele Abballe	Modelling the evolution of the hinterland of Ravenna: human-environment relationships in an extremely dynamic alluvial landscape
9-3	Michela Leonardi	Palaeoecology made easy: pastclim and tidysdm, two new R packages to make the best use of palaeo big data
9-4	Margherita Colucci	A case study: modelling human-malaria coevolution through time using paleoclimatic and palaeoenvironmental databases
9-5	Ümit Cevher Elmas	Quantity over quality? Unraveling the impact of chronological uncertainties in paleoenvironmental databases: A case study from Lake Burdur
9-6	Thomas Giesecke	The Neotoma Palaeoecology Database as a research tool to assess human landscape interactions during the Quaternary
12:30-13:30	Lunch	
13:30-15:00	Session 10: History unleashed: Harnessing the knowledge stored in historical documents <i>Session organisers: Adam Izdebski and Carlo Coccozza</i>	

10-1	Luke Anderson-Trocmé	Unraveling French Canadian ancestry: An interplay of genetics, genealogies, and geography
10-2	David Max Findley	Harmonizing big datasets: PANTROPOCENE, Land use modelling, and the historical tropics
10-3	Daniel Baránek	From historical sources to Wikibase
10-4	Etienne Wasmer	A cross-verified database of locations visited by notable individuals

10-5 Clément Gorin A convolutional network approach to mining historical map data

10-6 Sonia Medina Gordo [POSTER] Script-based automation practices: some experiences for managing early medieval society through written evidence

15:00-15:30 **Coffee break**

15:30-16:45 **Session 11. Modelling expansions in South America: Integrating archaeology and linguistics**
Session organisers: Fabrício Ferraz Gerardi and Bruno de Souza Barreto

11-1 Paul Heggarty Combining archaeology, language and genetics into a single human (pre)history through time, space, and ecology

11-2 Rafael de Almeida Lopes Using spatial and chronological modelling to understand the Polychrome Tradition Expansion in Central Amazon

11-3 Bruno de Souza Barreto Demic diffusion, cultural transmission and change: assessing the spread of the Koriabo pottery style as an archaeological correlate of the Cariban-languages expansions in northern Amazonia

11-4 Fabrício Ferraz Gerardi A phylogenetic study of the Cariban language family

11-5 Kathrin Nägele Beyond broad strokes – the future of ancient DNA in the Americas

16:45-17:00 **Closing remarks**

Saturday, November 25

10:00-12:00 Talk: A tour into the history of Jena
